

CLAIMS

What is claimed is:

1. A USB extender for extending the distance between a host and a device, the USB extender comprising:
 - a controller;
 - a host transceiver connectable to a USB host and configured to transmit to the USB host both standard USB commands and non-standard USB commands received from the controller; and
 - a device transceiver connectable to a USB device and configured to receive both standard USB commands and non-standard USB commands from the USB device and to transmit the received USB commands to the controller;wherein the controller is configured to determine the nature of the USB commands received at the device transceiver and to transmit determined commands to the host transceiver.
2. The USB extender of claim 1 wherein the host transceiver is further configured to receive USB commands from the host and to transmit the received USB commands to the controller.
3. The USB extender of claim 2 wherein the device transceiver is further configured to transmit to the device USB commands received from the controller.
4. The USB extender of claim 3 wherein the controller is further configured to determine the nature of the USB commands received at the host transceiver and to transmit determined commands to the device transceiver.
5. A USB extender for extending the distance between a host and a device, the USB extender comprising:
 - a host unit connectable to a USB host and configured to transmit to the host both standard USB commands and non-standard USB commands received from a device unit via a non-USB communications channel;

a device unit connectable to a USB device and configured to receive both standard USB commands and non-standard USB commands from the USB device and transmit the received commands to the host unit via the non-USB communications channel; and

a non-USB communications channel between the host unit and the device unit.

6. The USB extender of claim 5 wherein at least one non-standard USB command received by the device unit from the device is a Mac power-on command.

7. The USB extender of claim 6 wherein the host unit comprises a host power status detector.

8. The USB extender of claim 7 wherein the USB extender is configured to maintain a voltage from the host to the USB device when the host is in a lower power mode and wherein the USB extender is configured to create a change in a maintained voltage when the device unit receives Mac power-on command.

9. The USB extender of claim 8 wherein the maintained voltage is about 0.7 volts to about 1 volt.

10. The USB extender of claim 5 wherein at least one non-standard USB command received by the device unit from the device is a SUN power management command.

11. The USB extender of claim 5 wherein the host unit and device unit each comprise a USB to non-USB signal converter for converting USB signals to non-USB signals and a non-USB to USB signal converter for converting non-USB signals to USB signals.

12. The USB extender of claim 11 wherein the non-USB to USB signal converter and USB to non-USB signal converter are the same signal converter.

13. The USB extender of claim 5 wherein the host unit and device unit each comprise a voltage regulator for regulating voltage from the host to the USB device.

14. The USB extender of claim 5 further comprising a hub for accepting USB commands from multiple USB devices.

15. The USB extender of claim 14 wherein a device unit controller is configured to determine the device from which the USB commands are received.

16. The USB extender of claim 5 wherein the host unit is further configured to receive USB commands from a host and to transmit the received USB commands to the device unit via a non-USB communications channel.

17. The USB extender of claim 5 wherein the device unit is further configured to receive USB commands from a host unit via a non-USB communications channel and to transmit the received USB commands to the device.

18. The USB extender of claim 5 wherein the USB extender is compatible with at least one of USB 1.x and USB 2.x.

19. A method for extending the distance between a host and a Mac keyboard device that uses non-standard USB commands, the method comprising:

detecting the host power status by a host unit;

maintaining a voltage from the host to the keyboard when the host is powered down;

receiving a USB command from the keyboard at a USB extender device unit;

determining the nature of the command;

coupling the maintained voltage to ground upon determining that the host is powered down and the received command is a Mac power-on command;
transmitting the received USB command from the USB extender device unit over a non-USB communications channel to a USB extender host unit; and
transmitting the USB command received at the USB extender host unit to the host over a USB communications channel.

20. The method of claim 16 further comprising responding to a request from a host with a not acknowledge command and sending the request to the USB device.